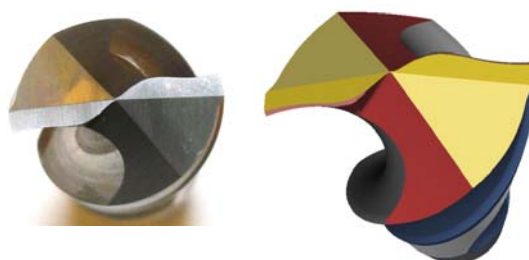
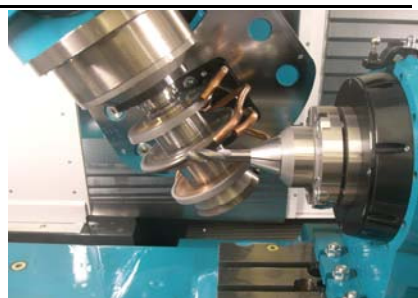




















High performance Drill Ø16 Z2

A05-062

The high performance drill delta-c-like or R840-like is ground from a solid carbide blank. The tip geometry corresponds to a 4 faceted drilltip with S-gash. The requested flute geometry is achieved with a form wheel - a 42 deg 1V1 with radius 3.5. In order to save production time the cylindrical OD is ground in a similar way as radial clearances are ground on endmills. For the first tool the geometry of the main cutting edge of the tip is scanned with a special probe tip to generate the grinding points for the k-land. Subsequent tools of the same lot don't need to be probed again.



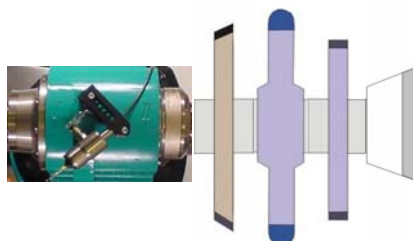
1. Cycletime for Production

Workpiece:	Diameter 16 mm, Z 2, Length of cutting edge 45 mm, Helix angle 30°									
Material	CARBIDE									
Operations										
Feed [mm/Min]	2000	35	150	50	65	130	50	80	100	120
Power [kW]		5	2	4	4	2	3	1	1	4
Cutting feed [m/s]		18	22	22	22	22	22	22	22	22
Used wheels										
Grinding time [s]	12	215	48	73	131	70	49	38	68	59
Total cycle time	12 Min 43									

The cycle times are indicative. Material to be ground, grinding wheels, coolants can influence the cycle times considerably.

2. Used Grinding Wheels

1	DXF Ø175 D64
2	12V9 Ø125 D64
3	1V1 Ø125 D64
4	1A1 Ø125 D64
5	11V9 Ø100 D64



3 1 4 5

3. Machine and Software Requirements

Machines: 5 axes CNC grinders : GEMINI DMR

Control: Fanuc 31i

Accessories:

Responsible engineer: OP. 30.11.09

Coolant: Synthetic Oil, pressure 10 bar

Software: Quinto 5

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